UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

February 11, 2009

Dr. James M. Shuler
Manager, Packaging Certification Program
Safety Management and Operations
Office of Environmental Management
U.S. Department of Energy
Washington, DC 20585

SUBJECT: CERTIFICATE OF COMPLIANCE NO. 9329, REVISION 2, FOR THE MODEL NO. S300 PACKAGE (TAC NO. L24307)

Dear Dr. Shuler:

As requested by the application dated February 9, 2009, as supplemented February 10, 2009, enclosed is Certificate of Compliance No. 9329, Revision No. 2, for the Model No. S300 package. Changes made to the enclosed certificate are indicated by vertical lines in the margin. The staff's Safety Evaluation Report is also enclosed.

The Department of Energy has been registered as a user of the package under the provisions of 49 CFR 173.471. The approval constitutes authority to use the package for shipment of radioactive material and for the package to be shipped in accordance with the provisions of 49 CFR 173.471.

If you have any questions regarding this certificate, please contact me or Michele Sampson of my staff at (301) 492-3300.

Sincerely

Eric Benner, Chief
Licensing Branch
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

Docket No. 71-9329
TAC No. L24307

Enclosures:
1. Certificate of Compliance No. 9239, Rev. No. 2
2. Safety Evaluation Report

cc w/encls: R. Boyle, Department of Transportation

NRC FORM 618
(8-2000)
10 CFR 71

U.S. NUCLEAR REGULATORY COMMISSION

CERTIFICATE OF COMPLIANCE
FOR RADIOACTIVE MATERIAL PACKAGES

1 a CERTIFICATE NUMBER	b REVISION NUMBER	c DOCKET NUMBER	d PACKAGE IDENTIFICATION NUMBER	PAGE		PAGES
9329	2	71-9329	USA/9329/AF-96	1	OF	4

2 PREAMBLE

a. This certificate is issued to certify that the package (packaging and contents) described in Item 5 below meets the applicable safety standards set forth in Title 10, Code of Federal Regulations Part 71, "Packaging and Transportation of Radioactive Material."

b. This certificate does not relieve the consignor from compliance with any requirement of the regulations of the U.S. Department of Transportation or other applicable regulatory agencies, including the government of any country through or into which the package will be transported.

3. THIS CERTIFICATE IS ISSUED ON THE BASIS OF A SAFETY ANALYSIS REPORT OF THE PACKAGE DESIGN OR APPLICATION

a ISSUED TO *(Name and Address)*

U.S. Department of Energy
Washington, D.C. 20585

b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION

U.S. Department of Energy
application dated August 23, 2006,
as supplemented.

4. CONDITIONS

This certificate is conditional upon fulfilling the requirements of 10 CFR Part 71, as applicable, and the conditions specified below

5.

a. Packaging

(1) Model No.: S300

(2) Description

The Model No. S300 package is a cylindrical container that is approximately 89 centimeters (35 inches) in overall height and 60 centimeters (23 inches) in overall diameter. The Model No. S300 is comprised of an overpack, pipe component, and a shielding insert. The Model No. S300 is designed to transport a single plutonium-beryllium (PuBe) special form capsule (SFC). The maximum gross weight of the package is 217.7 kilograms (480 lbs).

The overpack design utilizes a standard 55-gallon drum as the outer container. A standard bolted clamping ring secures the drum lid to the drum body. Within the drum body is a rigid polyethylene liner (body and lid). Lid liner and lid are pierced and the drum lid is fitted with a filter vent. Within the liner is cane fiberboard dunnage and a sheet of plywood to provided shock absorption for the pipe component.

The pipe component consists of a stainless steel cylindrical pipe welded to a stainless steel flat cap at the bottom end and a bolted pipe flange at the other end. The pipe component is closed with a stainless steel flat lid attached to the flange with 12 stainless steel bolts. A filter vent is installed in the lid. The flange-to-lid seal is either a butyl or ethylene propylene elastomeric o-ring.

5. a. Packaging (continued)

(2) Description (continued)

The shielding insert is located within the pipe component. The shielding insert is made from solid high density polyethylene plastic. Within the shielding insert is a cylindrical opening sized to accommodate the SFC.

(3) Drawings

The packaging is constructed in accordance with Areva drawing No. 60999-SAR, sheets 1 through 3, Revision 0, S300 Packaging SAR Drawing.

b. Contents

(1) Type and form material

Plutonium and its decay products in the form of PuBe sources meeting the requirements of special form sources and limited to:

(a) The Model II source capsule - IAEA Certificate of Competent Authority Special Form Radioactive Materials Certificate Number USA/0696/S–96, Revision 4, issued by the U.S. Department of Transportation (DOT).

(b) The Model III source capsule - IAEA Certificate of Competent Authority Special Form Radioactive Materials Certificate Number USA/0695/S–96, Revision 4, issued by the DOT.

(2) Maximum quantity of material per package:

One source capsule, containing a maximum quantity of fissile plutonium (Pu-239 plus Pu-241) as shown below.

Non-Exclusive Use Shipment		Exclusive Use Shipment	
Model II	Model III	Model II	Model III
206 grams fissile plutonium	160 grams fissile plutonium	350 grams fissile plutonium	160 grams fissile plutonium

5. b. Contents (continued)

(2) Maximum quantity of material per package: (continued)

Source capsule may contain radionuclides listed below within the ranges shown.

Radionuclide	Percentage of total plutonium mass
Pu-238	0 – 0.5%
Pu-239	73 – 97%
Pu-240	3 – 21%
Pu-241	0 – 3%
Pu-242	0 – 2%
Am-241	0 – 2.5%

Total quantity of radioactive material within a package may not exceed a Type A quantity.

c. Criticality Safety Index 0.0

6. Transport by air is not authorized.

7. In addition to the requirements of Subpart G of 10 CFR Part 71:

a. Each package shall be prepared for shipment and operated in accordance with the "Package Operations," in Chapter 7 of the application.

b. Each package shall be tested and maintained in accordance with the "Acceptance Tests and Maintenance Program," in Chapter 8 of the application.

8. The package authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR 71.17.

9. Expiration date: November 30, 2011.

REFERENCES

U.S. Department of Energy application dated August 23, 2006.

Supplement dated: November 8, 2006, April 19, 2007, and February 9 and 10, 2009.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Eric Benner, Chief
Licensing Branch
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

Date: February 11, 2009

SAFETY EVALUATION REPORT

Docket No. 71-9329
Model No. S300 Package
Certificate of Compliance No. 9329
Revision No. 2

SUMMARY

By application dated February 9, 2009, as supplemented February 10, 2009, Los Alamos National Laboratory, on behalf of the U.S. Department of Energy (the applicant), requested revision of Certificate of Compliance No. 9239, for the Model No. S300 package. The applicant requested changes to the Certificate to reflect the current revisions of the special form certificates for the Model II and Model III source capsules, which are specifically cited in Condition No. 5.b(1).

EVALUATION

The staff evaluated the applicant's request to update the revision number of the IAEA Certificate of Competent Authority Special Form Radioactive Materials, for the Model II (USA/0696/S-96) and Model III (USA/0695/S-96) special form capsules from Revision 2 to Revision 4, and to explicitly describe impurities in the Pu-239 material referenced in the certificates. The staff reviewed the revised special form certificates and agrees that their incorporation constitutes a minor technical change to the Certificate. There is no increase in fissile mass authorized for the package, and the contents are limited to a Type A quantity of radioactive material.

As a result of the revision request, the following changes have been made to the Certificate.

Condition No. 5.b(1) was revised to clarify the type and form of material as plutonium and its decay products, and to update the revision number to Revision 4 of the special form source certificates for both the Model II and Model III source capsules.

Condition No. 5.b(2) was revised to specify that the maximum quantity of fissile plutonium allowed in the source capsule is the sum of the plutonium-239 and plutonium-241. Staff has incorporated a table identifying radionuclides which may be present in the source capsule as a percentage of the total plutonium mass. Additionally, for clarity, staff specified the limit on total quantity of radioactive material in the package, which may not exceed a Type A quantity.

Based on the statements and representations in the application, and the conditions listed in the Certificate, the staff concludes that the design has been adequately described and evaluated and meets the requirements of 10 CFR Part 71.

CONCLUSION

The certificate has been revised as requested by the applicant, as follows:

- Conditions No. 5.b(1)(a) and No. 5.b(1)(b) of the certificate have been revised to clarify the radionuclide content within the source capsule and reflect the current DOT certificate revisions of both the Model II and Model III source capsules.
- Condition No. 5.b(2) of the certificate has been revised to clarify the radionuclide content within the source capsule and clarify the total quantity of radioactive material within the package may not exceed a Type A quantity.

These changes do not affect the ability of the package to meet the requirements of 10 CFR Part 71.

Issued with Certificate of Compliance No. 9329, Revision No. 2,
on February 11, 2009.